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## PUBLIC HEALTH REPORTS.

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### SUMMARY OF TRANSACTIONS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE, FISCAL YEAR 1909, AND TO NOVEMBER 1, 1909.

#### ANTI-PLAGUE OPERATIONS ON THE PACIFIC COAST.

During the year 1909 no further cases of human plague occurred in San Francisco, and but four cases of rat plague, the last occurring October 23, 1908.

The operations of the service in San Francisco included the inspection of 5,681 persons, investigation of 344 cases of illness, and 96 necropsies. The rats caught numbered 156,059, of which 93,558 were examined. The premises inspected numbered 365,925; buildings disinfected, 4,572; buildings made rat-proof, 846; and nuisances abated, 48,299.

The effect of this work, with state and local cooperation, has been to place San Francisco in a satisfactory sanitary condition.

In Oakland no human plague occurred from July 17, 1908, to October 26, 1909, and no rodent plague since December 1 of the former year. On October 26, 1909, a case was reported which had received its infection in Contra Costa County. The number of cases of sickness investigated during the fiscal year was 170, and number of necropsies, 65. The rats caught numbered 25,889, of which 16,593 were examined, and 2 found to be infected with plague. The premises inspected numbered 2,550, and the buildings disinfected, 4,289.

At Los Angeles, on August 11, 1908, a case of human plague was reported, and shortly afterwards a ground squirrel was found with plague infection. A service officer was detailed from the hygienic laboratory to take charge of the laboratory provided by the local authorities. Between September 24, 1908, and April 12, 1909, when the medical officer was withdrawn, 13,922 animals were destroyed and examined for plague infection, including 4,722 ground squirrels and 8,977 rats. None were found infected.

In Seattle, Wash., during the fiscal year 51,750 rats were caught, and 48,652 examined. There was no case of human plague, but 10 rats were found infected, the last one September 26, 1908. There have been in all but 3 cases of human plague discovered in Seattle since the appearance of the first case October 16, 1907, the last case occurring October 25 of the same year.

#### PLAGUE AMONG GROUND SQUIRRELS.

In April, 1909, investigation revealed a widespread infection among ground squirrels in Contra Costa County, Cal. It is believed that no portion of Contra Costa County, which is some 744 square miles in extent, is free from this infection. About May 1, 1909, an

organized campaign was inaugurated by the service for the destruction of these animals under the charge of a commissioned medical officer. Inspectors, foremen, and laborers to the number of 30, visit the infected ranches and with local cooperation engage in the destruction of the squirrels by poisoning and shooting. Bulletins published by the bureau, containing all necessary information, are at the same time distributed. There have been to October 30, 44,843 squirrels destroyed, of which number 298 have been found to be infected. The warfare has been extended to adjoining counties, and an average of 300 squirrels a day are being destroyed. Four thousand, five hundred and eleven ranches have thus far (Oct. 30, 1909) been inspected. It will be necessary to continue this work for an indefinite period until all this plague infection has been eliminated.

#### PLAGUE IN OTHER COUNTRIES.

Plague has markedly diminished in India. For the fiscal year 1909 there were but 168,403 cases, as against 730,729 for the previous fiscal year, and more than 1,022,000 for the fiscal year 1907.

In South America the situation remains about the same as a year ago, the disease still existing in Ecuador, Peru, Chile, Uruguay, Brazil, and Venezuela. No cases were reported from Argentina. In Peru 1,192 cases with 560 deaths have been reported. In the West Indies, Trinidad was afflicted with 18 cases, 14 being fatal. The menace to the United States, therefore, still continues. Of special significance to the United States also were the outbreaks of this disease in Fayal and Terceira in the Azores. Unceasing vigilance will be required in quarantine administration to prevent the further introduction of this disease. Medical officers are on duty at Guayaquil, Callao, Rio de Janeiro, and La Guaira, and special instructions have been issued for close quarantine surveillance and for the destruction of rats aboard vessels.

#### TYPHOID FEVER.

Three years ago the Commissioners of the District of Columbia, on account of the continued prevalence of typhoid fever in Washington, requested the Public Health and Marine-Hospital Service to make an investigation to determine the cause of this continued prevalence. A board was therefore appointed, and has just completed its third report, which has been published as Hygienic Laboratory Bulletin No. 52. The board is still investigating, and will make a fourth report, which will terminate its labors. The investigations thus far made indicate that somewhat less than 10 per cent of the cases of typhoid fever are definitely attributed to infected milk.

The three years' study has shown that in 1906 infected milk, contact, and imported cases accounted for 30.93 per cent of the cases for that year, 48.46 per cent for 1907, and 46.76 per cent for 1908. The board states that it does not seem probable that for the seasons 1907 and 1908 Potomac water could have been directly responsible for much, if any, of the infection, and there is not yet sufficient evidence for positive conclusion as to just what part this river water has played in the causation of the disease in previous years. They call attention to the frequent neglect of the disinfection of excreta, and the need of

legal control of typhoid-fever patients, and typhoid-bacillus carriers, and the necessity in general of treating this disease as a contagious disease.

These reports have an additional value in presenting a standard method of investigating the causes of the prevalence of typhoid fever in a city, which standard has already been followed by the cities of Richmond and Pittsburg. Results obtained in the different cities from operations on the same plan become comparable and of greater practical utility.

The spread of typhoid fever through the pollution of interstate waters, particularly the Great Lakes, is an important sanitary problem, requiring congressional legislation. The service is represented by one of its officers on the Lake Michigan Water Pollution Commission, and its advice and assistance requested by the Niagara Frontier Pure Water Conference.

#### TUBERCULOSIS.

The service was adequately represented in the Sixth International Congress on Tuberculosis, at Washington, September 28 to October 5, 1908, both in the administrative and scientific work and the exhibit.

In the laboratory the presence of the tubercle bacillus in the market milk of Washington has been demonstrated, and its thermal death point determined ( $60^{\circ}$  C. for 20 minutes). Experiments to determine whether the bacillus can be recovered from the blood of affected persons have given negative results. These studies are reported in Bulletin No. 57.

Under executive order of February 26, 1906, departmental employees have been examined for tuberculosis and certificates given.

The service has given advisory support to the Colored Antituberculosis League, established at the suggestion of one of its officers, by the colored people of the South. A working plan, together with the constitution and by-laws and form of membership certificate, has been published in the Public Health Reports, and the movement, which now embraces seven Southern States, promises good results.

At Fort Stanton, N. Mex., where the service has a sanatorium for the treatment of tuberculosis cases, with a reservation of 46 square miles, 399 patients have been cared for during the year.

While, of course, it is known that the outdoor treatment anywhere is efficacious, still the climate, the altitude, and dryness of air at Fort Stanton render it particularly available for the care of these cases. But there is more than a mere care of cases in the sanatorium idea. The patients in this institution come from the merchant marine of the United States, and by being sent to Fort Stanton are removed from the forecabin, boarding houses, and hospitals, where they would undoubtedly infect others.

While great care is exercised in stating that patients are positively cured, there is undoubted evidence to that effect, as illustrated by the following: Some time ago two patients who had been discharged as absolutely cured from Fort Stanton were admitted, one in the marine hospital at Boston and the other at the marine hospital at Chicago, for diseases entirely distinct from tuberculosis and from which they died. The medical officers knowing that they had been discharged

as absolutely cured of tuberculosis were careful in the post-mortem examinations and found that there was absolutely no active pathological condition in the lungs. The healing had been complete.

#### RABIES.

An investigation has been made to determine the prevalence of rabies in the United States and its geographical distribution.

During the calendar year 1908 there were 111 deaths from this disease and 534 infected localities, as shown by reports of rabies among animals. The disease prevailed in 38 States and Territories and the District of Columbia in the eastern three-fourths of the United States. No cases were reported from the Rocky Mountain and Pacific coast regions.

During the fiscal year the Pasteur treatment was administered to 130 persons at the Hygienic Laboratory. The "fixed virus" there prepared was furnished from time to time for use in the Canal Zone, and was sent to the health officers of several States. A bulletin on rabies, giving the results of these investigations and operations, has been published.

#### PELLAGRA.

Pellagra, a disease which has prevailed in certain parts of Europe for more than a century, has recently been reported from various parts of the country, notably the Southern States. Its apparent increase and severity and its suspected relationship to diseased corn make it a matter of great concern and economic importance.

A year and a half ago, recognizing that this disease was to become one of national importance, a special officer was detailed for its investigation, giving his whole time to this one disease alone, and four bulletins prepared by him on the subject have been published by the bureau, and statistical information is being obtained. Recently, within the past month, the investigation has been broadened by the appointment, with the approval of the Secretary of the Treasury, of a special commission for the investigation of pellagra, this commission consisting of 7 members, 5 of whom are connected with the Hygienic Laboratory of the service, and 2 connected with the large Government Hospital for the Insane, St. Elizabeth's, at Washington. Insanity being a frequent accompaniment of this disease, the superintendent of St. Elizabeth's was appointed on the commission, and also one of his assistants, especially noted as an expert in nerve pathology.

#### HOOK-WORM DISEASE.

Four pamphlets upon the subject of hook-worm disease have been published, and an officer who has specially investigated this disease has been detailed to address several public-health and medical associations on the subject.

Failure of requested legislation has prevented a campaign of education in conjunction with the state boards of health, which had been contemplated.

A report on hookworm disease in its relation to child labor, requested by the Secretary of the Department of Commerce and Labor,

has recently been completed. This report was prepared by Dr. Ch. Wardell Stiles, Chief of the Division of Zoology of the Hygienic Laboratory. His conclusions on the subject of child labor in the South are not in harmony with those popularly entertained. He is of the opinion that this subject involves questions which give to it an aspect quite different from that of child labor in the North, and his conclusions can best be summarized by his statement that if he had to choose between placing his own 10-year-old daughter in the spinning room of a cotton mill and placing her on the average small tenant farm of the South he would be obliged in the best interests of the child to send her to the mill. In 1902, when Doctor Stiles pointed out the widespread prevalence of hookworm disease in the South, his views were regarded by some as extreme, but to-day it is generally admitted that those views were correct and there are gratifying indications of a popular awakening of public sentiment, which will eventually lead to an improvement in the sanitary conditions.

During the present fiscal year Doctor Stiles has inspected 26 factories in New England, including 16 cotton mills and 1 knitting mill, but in an examination of the 1,437 cotton-mill hands seen he has failed to find a single case of that severe type of anæmia (known as "cotton-mill anæmia") which he found in 12.6 per cent of the cotton-mill hands of the South. As the New England mills are using southern cotton, and as the mill hands are therefore breathing in the same kind of lint as are the southern cotton-mill hands, these observations give an additional proof of the error of the popular idea that the condition of the latter mill hands is due to the breathing in of lint. Such an array of data is now on hand not in harmony with the lint theory that when all facts are published he believes public opinion on this theory will of necessity undergo a change.

Hookworm disease is entirely due to soil pollution, and in order to awaken popular interest in the subject of soil pollution in connection with the disease Doctor Stiles, in connection with his other duties, has been given several details to lecture on the subject. In addition he has given 25 popular and technical lectures on this subject in five States without expense to the Government.

While the eradication of hookworm disease within a State is primarily the duty of its sanitary authorities, nevertheless, on account of the widespread distribution of the disease and its baneful influence on the population of the country as a whole the Federal Government should cooperate with state authorities, and this cooperation should include especially a widespread campaign of education regarding the measures necessary to prevent the transmission of hookworm disease and treatment of the large number of persons afflicted in different sections of the country.

The gift of a million dollars by Mr. Rockefeller, and the appointment by him of a commission for the purpose of eradicating this disease is a matter of great import. It should be remarked, too, that Mr. Rockefeller's noble gift is not restricted in its use to the interest upon an endowment, but that it provides for the expenditure for five years of \$200,000 each year.

One of the members of this commission is Doctor Stiles, who has devoted himself so assiduously to this subject, and who is Chief of the Division of Zoology in the Hygienic Laboratory.

## LEPROSY.

In 1905 Congress appropriated \$100,000 for the erection of a leprosy investigation station on the island of Molokai, in Hawaii. Great difficulty was experienced in erecting the buildings, on account of the difficulty in securing labor, caused by the fear of the disease. The investigations, however, were begun in a temporary laboratory in Honolulu. The station at Molokai, some 60 miles distant, is now completed and is about ready for occupancy.

The results obtained thus far in the investigations made at the receiving station in Honolulu are embodied in six reports, which have been published.

The investigation of incipient cases at Honolulu will continue even after the main station at Molokai is opened, as such cases present the best opportunity for the study of early methods of diagnosis and means of relief. Studies are being made of the pathological anatomy of the nasal cavity in leprosy; treatment of incipient cases of leprosy with tuberculin, atoxyol, strychnine, chaulmoogra oil, and cinnamate of soda; examination of the urine of lepers for acid-fast bacilli, and attempts to grow the *lepra bacillus* on several media.

On the other hand, experiments on animals and such other work as requires large amounts of leprosy material can best be carried on at the station on Molokai, where the service has full control of the patients under its care. Both lines of investigation are of importance; each assists the other, and together they form a comprehensive plan that should bring about results for which the investigation was begun.

The many problems that leprosy presents has for convenience been grouped into two classes:

The first class includes four important problems, namely, the growth of the *lepra bacillus* on artificial media; the successful inoculation of the lower animals; the discovery of a substance analogous to tuberculin, of use as a remedial or diagnostic agent; the discovery of the usual mechanism whereby the infection spreads from one person to another.

In the second class are included lesser problems that step by step add to our knowledge of the disease, and while not apparently of so great immediate importance yet may indicate the path that leads to the solution of the greater problems mentioned.

The investigations inaugurated have for their primary object the solution of the greater problems mentioned, but it is realized that scientists in many lands have sought in vain for their solution, and years may elapse before success is attained.

If, however, efforts were thus confined the station might continue its work for years without obtaining results worthy of publication, and the greatest utility to the sanitary and scientific world would not be subserved. Every effort will therefore be made to throw all possible light on different phases of the leprosy problem, and it is expected that results will be obtained from time to time that permit of positive opinions and announcements.

With a well-equipped station and laboratory, an abundance of clinical material, and a well-trained corps of scientific workers, it is reasonable to expect that interesting and useful knowledge bearing on leprosy will be obtained.

The service was represented by the director of this station at the Second International Congress Against Leprosy, held in Bergen, Norway, August 16 to 19, 1909, and his report has been published.

#### YELLOW FEVER.

There has been no yellow fever in the United States, and a marked absence of this disease during the active quarantine season of 1909, in Cuban, Mexican, West Indian, Central, and South American ports. This great improvement in the yellow fever situation is attributed to the greater attention being paid to sanitation.

#### CHOLERA.

Cholera being prevalent in Russia, an officer was detailed in the office of the United States consul at Libau, which is the only port in Russia from which vessels carrying emigrants sail direct for the United States. Cholera was reported in Rotterdam August 26, 1909, and an officer on duty at Naples was sent to that port to assist the consul in enforcing the Treasury regulations. The outbreak, however, was of short duration, the disease being a recent importation from Russia, and terminated about September 11, there having been 13 cases and 5 deaths. In Manila there were 981 cases and 23,094 cases in the provinces of the Philippine Islands.

#### SMALLPOX.

In the United States, 42 States, 1 Territory, and the District of Columbia reported 24,657 cases of smallpox, with 75 deaths, being 6,543 cases and 6 deaths less than reported for the fiscal year 1908. During the fiscal year 1902 there were reported 55,857 cases, with 1,852 deaths. Since then the number of cases and deaths has gradually diminished.

#### VACCINE VIRUS AND ANTITOXINS.

Twenty-one establishments were licensed by the department, 10 of them being foreign, under the act approved July 1, 1902. Investigations during the year demonstrated that foot-and-mouth disease may be transmitted to animals through vaccine virus. An outbreak of this disease was traced to the vaccine virus of two establishments. The license of one firm, which had expired, was not renewed, and the license of the other was suspended until all infected virus had been withdrawn from the market and the infection eradicated. The infection was due to importation from abroad, and revised regulations were therefore issued which will effectually control the importation of this product, whether intended for sale or for laboratory purposes.

#### HYGIENIC LABORATORY.

The additions to the building, provided by Congress, and trebling its capacity, were completed during the year. Nine bulletins containing the results of scientific investigations were issued. The total personnel of the laboratory numbers 60.



Besides the above, the laboratory has an advisory board, composed of representatives of the three medical services of the Government, and the Bureau of Animal Industry, and five others, representing laboratories devoted to like research. These five members are: Prof. William T. Sedgwick, of the Massachusetts Institute of Technology; Prof. Victor C. Vaughn, of the University of Michigan; Prof. Simon Flexner, of the Rockefeller Institute for Medical Research; Prof. William H. Welch, of the Johns Hopkins University; and Prof. Frank Westbrook, of the University of Minnesota. Through this advisory board the Hygienic Laboratory is kept in touch with investigations in other laboratories, and has advice regarding investigations being made or to be made in the government institution.

#### RELATIONS TO THE PHARMACOPŒIA.

In 1908 the board of trustees of the United States Pharmacopœia convention called upon the bureau to undertake the publication of a series of bulletins embodying digests of comments on the pharmacopœia. This work was begun in the Division of Pharmacology of the Hygienic Laboratory, and the first digest of comments was compiled and published during the fiscal year as Bulletin No. 49 of the Hygienic Laboratory. In beginning the work it was decided to compile the material chronologically so as to present the available comments in proper sequence. The above-mentioned bulletin therefore deals with literature of the latter half of 1905, representing the period from the publication of the eighth decennial revision of the pharmacopœia to December 31, 1905.

The comments contained in this bulletin are interesting and indicative of current opinions regarding the future of this work and the development of the Division of Pharmacology. In most foreign countries the pharmacopœia is a government publication, and its preparation is purely a governmental function. For eighty-five years the pharmacopœia of the United States has been by contrast a wholly private enterprise, compiled, developed, and published by members of a voluntary organization, and attaining a legal status only gradually through the enactment of statutes by the several States which recognized its standards. Through recent national legislation this publication has become the federal standard, and the significance and far-reaching effects of this change of status are shown by the fact that within a year some revision of the pharmacopœia was made necessary. The problem now to be faced by the Government and by the makers of the pharmacopœia is, what shall be the attitude of each to the other with reference to what has been termed "a sanitary institution of the first rank."

It is gratifying that the work already done by the Government has been welcomed and accepted as evidence that the relation of the Federal Government to the pharmacopœial convention is to be that of cooperation without domination.

The first volume of digests already published has been accepted by those interested as an expression of governmental interest in a volume of national consequence, and that such interest is second only to the legislative action making it the official standard in this country.

A second digest of comments on the pharmacopœia has been prepared and submitted for publication as Bulletin 58 of the Hygienic

Laboratory. This second bulletin covers the literature for the calendar year ended December 31, 1906. This period was one of unusual interest and activity in matters relating to the Pharmacopœia of the United States.

The enactment of the food and drug act June 30, 1906, and the signing November 29, 1906, of an agreement by the United States and other powers for the unification of the pharmacopœial formulas for potent drugs make the pharmacopœia a legal standard, for the development of which, in part at least, the Government has incurred treaty obligations.

Since the Pharmacopœia of the United States and the National Formulary have become legal standards, the medicaments to be incorporated require careful study and the collection of disinterested information. This is necessary, inasmuch as not only powerful financial interests but the maintenance of the public health are involved. In accordance with a resolution adopted by the American Pharmaceutical Association, the second digest of comments that has been prepared relates also to the National Formulary.

Besides the compiling and publication of a series of comments there is also a great deal of important work to be done in relation to the remedies to be incorporated in the pharmacopœia, and the chairman of the revision committee has advocated the carrying on of such work in a government proving laboratory. The necessary test for the identity and purity of official remedies should be elaborated by workers who are free from the stress of commercial self-interest and competition, and such work can be carried on in the Hygienic Laboratory, where the methods of making official preparations of official drugs and the standardizing of such preparations when so made should also be done.

Much work has been carried on in the Division of Pharmacology in relation to therapeutic remedies. In view of the coming pharmaceutical convention, the chairman of revision requested that some additional work be undertaken on the determination of melting points and boiling points in the pharmacopœia. He pointed out that the melting point and boiling point of the various substances contained in the present pharmacopœia had not all been determined by the same method, and that chemists and physicists were not united on the best and simplest means of determining these factors. He stated that there was necessity for uniform method of taking the melting point and boiling point, and requested that tests be made, and comparative tables be prepared for use in the next revision of the pharmacopœia. It was decided, with the approval of the Secretary of the Treasury, to undertake this work, and investigations are now in progress for the determination of the physical constants of pharmacopœial substances, which includes boiling point, melting point, and solubilities.

The results of investigations into the relation of the iodine content to the physiologic activity of thyroid preparations, the physiological standardization of suprarenal preparations, and such drugs as digitalis, into the toxicity of acetanilid mixtures, and the standardization of antitetanic serum, which have been published, will be of value to members of the pharmaceutical convention.

Closely related with the work of the service in connection with the United States Pharmacopœia is its cooperation with the American

Medical Association in the work of the Council on Pharmacology and Chemistry, four of whose members are government officials, two of them in the Division of Pharmacology. In addition to the routine work carried on in connection with the council with reference to the general question of new remedies, it has been shown in the Division of Pharmacology that digalen, a widely advertised preparation, under certain conditions becomes inert. There has also been demonstrated the variability of the extremely potent suprarenal preparations. Many unofficial drugs which have been used to a greater or lesser extent, some of them official at one time or another, are being studied with a view to determining whether they are of sufficient merit to justify therapeutic use.

#### SANITARY CONFERENCES AND ADVISORY BOARD.

The Seventh Annual Conference of State and Territorial Health Officers with the Public Health and Marine-Hospital Service was held in Washington June 2 and 3, 1909. Twenty-six States and Territories and the District of Columbia were represented. The discussions illustrated the value of this official organization.

The advisory board of the Hygienic Laboratory was convened on March 26, 1909. Investigations conducted in the laboratory were discussed, and the advice of the board obtained with regard to the continuation of the same and the inauguration of new investigations.

The United States Government has been represented in the International Office of Hygiene at Paris by the detail of Surg. H. D. Geddings. Doctor Geddings is stationed now at Naples, Italy, supervising the medical inspection of emigrants leaving that port, and signing bills of health. It is so arranged that when occasion demands he can attend the meetings and represent this Government at the International Office of Hygiene in Paris. The service has also maintained its interest in the International Sanitary Bureau of the American Republics in Washington, and through a resolution passed by each body this bureau was brought into relations with the Office of Hygiene in Paris.

The Twelfth International Congress on Alcoholism was held in London July 18 to 24, 1909. The congress was well attended, there being about 1,400 members and practically all civilized countries being officially represented. Among the speakers were members of Parliament, prominent lawyers, including the lord chief justice, officers of the English navy and army, including the surgeon-general, railway officials, teachers, clergymen, and others.

Dr. Reid Hunt, Chief of the Division of Pharmacology, in his report of the meeting states that it seemed to be the consensus of opinion that alcohol in any form is but seldom of distinct value in the treatment of disease; also that some evidence was brought forward to show that alcohol even in moderate amounts has an unfavorable effect upon subsequent offspring and a tendency to lower resistance to infection. The danger of alcohol to those with any tendency to nervous or mental diseases was especially emphasized, as were also the effects upon children.

Statistics were presented showing that there has been a marked decrease in the use of alcohol in hospitals. The statement was also made that the only pharmacopœias which included whisky were those of the United States and Greece, and it was suggested that its

recognition in this way gave it an undue prominence as a medicinal agent.

Another point brought out was the extraordinary growth of total abstinence in the British army and navy. Forty per cent of the army in India are said to be total abstainers. The surgeon-general of the British army attributes this growth of total abstinence to the improvements that have been made in the housing and feeding of the soldiers.

The congress was held under the auspices of the British Government. The next meeting will be at The Hague in 1911.

#### NATIONAL QUARANTINE.

At the 44 quarantine stations in the continental United States, 8,266 vessels were inspected, of which 520 were disinfected. Inspection has been maintained on the Mexican border.

National quarantine has been administered at 7 ports in the Philippine Islands, 7 in Hawaii, and 8 in Porto Rico.

Medical officers have been stationed at 8 fruit ports in Central America to enforce special regulations relating to fruit vessels to permit their entry into the United States without detention.

Details have also been made to ports in Cuba, Mexico, Barbados, and St. Thomas, to Rio de Janeiro, Callao, Guayaquil, Naples, Calcutta, and to two ports in China and three in Japan. The officers have exercised quarantine supervision over vessels bound for the United States, and at a number of foreign ports have examined aliens by request of the Immigration Bureau and steamship companies. By request of the Venezuelan authorities, on account of the bubonic plague, an officer was detailed for duty at La Guaira; one also for immigration and quarantine service at Amoy, China, by request of the United States consul, with special reference to the protection of the Philippines.

In view of the establishment of a new line of steamers, plying from Salina Cruz and Manzanillo, on the Mexican-Pacific coast, direct to Honolulu, officers were appointed for the disinfection of vessels at the two Mexican ports named to prevent the introduction of yellow fever into the Hawaiian Islands, where this disease is at present unknown, but where the conditions are ripe for its spread should it be introduced.

#### MEDICAL INSPECTION OF IMMIGRANTS.

During the fiscal year 966,124 immigrants were inspected under the immigration laws and regulations, and 14,536 were certified for rejection on account of physical and mental defects. The inspections were conducted at 58 stations in the continental United States, Canada, Porto Rico, and Hawaii, but do not include the examinations in the Philippines or at foreign ports. Personal examinations were made of 965 aliens reported as public charges in various institutions throughout the United States to ascertain whether they should be deported under the immigration laws.

Service officers have also, under the supervision of the Commissioner of Immigration, conducted the large hospital for immigrants at Ellis Island, where 6,186 patients were admitted for treatment during the year.

## SERVICE PUBLICATIONS.

During the year 246,060 copies of the various publications edited in the bureau were distributed. These include the annual report, the Weekly Public Health Reports, the bulletins of the Hygienic Laboratory, and various special bulletins relating to the public health. A new edition of the bulletin entitled "Milk and its Relation to the Public Health" has been published.

## MARINE HOSPITALS.

In the 21 marine hospitals owned by the Government, and at the 126 other stations where seamen of the merchant marine receive hospital and dispensary treatment, there were treated during the fiscal year 53,074 patients, of which number 14,209 were treated in hospital, and 38,865 at the dispensaries. The new marine hospital at Buffalo, N. Y., has been completed, and is occupied.

Physical examinations, exclusive of immigrants, were made of 4,980 persons connected with the Revenue Cutter, Life Saving, Steamboat Inspection, Immigration, and Light House services, the Coast and Geodetic Survey, Civil Service Commission, Isthmian Canal Commission, and Philippine service.

## PERSONNEL.

At the close of the fiscal year there were 128 commissioned medical officers, namely: The Surgeon-General, 5 assistant surgeons-general, 35 surgeons, 66 passed assistant surgeons, and 21 assistant surgeons.

There were also 279 acting assistant surgeons, a total of 407 medical officers.

There were also 45 pharmacists.

Commissioned medical officers have served on special duty during the year as follows: Three have served with the Isthmian Canal Commission, respectively as director of hospitals, chief quarantine officer, and in charge of the quarantine at Panama, and quarantine officer at Colon.

Two officers have been continued as chief quarantine officer and director of health and as assistant director of health of the Philippine Islands, respectively.

One officer, under the act of February 15, 1893, has been continued for duty at Guayaquil, Ecuador.

Fourteen officers are assigned to exclusive immigration duty for the physical and mental examination of aliens, their services being supplemented by employment of acting assistant surgeons.

Six officers are detailed to the quarantine service of the Philippine Islands.

Seven officers are detailed for service upon vessels of the Revenue-Cutter Service.

Twenty-three officers are detailed at the several quarantine stations in the continental United States, in Porto Rico, and the Hawaiian Islands.

One surgeon, 4 passed assistant surgeons, and 1 assistant surgeon are assigned to duty in foreign countries to prevent the introduction into the United States of epidemic disease.